

AUTHORIZING THE COAST GUARD TO PRESCRIBE REGULATIONS COVERING LIFESAVING AND OTHER SAFETY EQUIPMENT

JULY 24, 1959.—Ordered to be printed

Mr. MAGNUSON, from the Committee on Interstate and Foreign Commerce, submitted the following

REPORT

[To accompany S. 2118]

The Committee on Interstate and Foreign Commerce, to whom was referred the bill (S. 2118) to amend section 488 of the Revised Statutes, as amended, to authorize the Secretary of the Department in which the Coast Guard is operating to prescribe regulations governing lifesaving equipment, firefighting equipment, muster lists, ground tackle, hawsers, and bilge systems aboard vessels, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

AMENDMENTS

On page 2, lines 7 and 14, delete the word "storage" and insert in lieu thereof the word "stowage".

PURPOSE OF THE BILL

The bill would amend section 4488 of the Revised Statutes, as amended, to authorize the Secretary of the Department in which the Coast Guard is operating, in the interest of improved safety aboard vessels subject to inspection and certification by the Coast Guard, to prescribe rules and regulations covering lifesaving equipment; firefighting equipment, and precautionary measures; muster lists, including special duties to be performed by crew members in the event of emergency; ground tackle and hawsers; and bilge systems for the removal of liquid from the various parts of vessels, etc. Such rules and regulations also will apply, the bill provides, to all foreign vessels carrying passengers from ports of the United States, unless otherwise prescribed by treaty or other international agreement.

The Secretary is authorized, under the bill, to exempt a vessel from the rules and regulations prescribed if he determines that application of the rules, etc., to that vessel is not necessary to the public interest.

The owner or operator of a vessel who neglects or refuses to equip his vessel with the equipment prescribed, or to take other measures required by the rules or regulations issued pursuant to section 4488 as amended by this act, shall be liable to a penalty of \$1,000 for each such neglect or refusal, for which sum the vessel shall be liable and may be seized and proceeded against by way of libel in any district court having jurisdiction; and any master or person in charge of such vessel who so defaults shall be liable to a penalty of \$500.

Any person who willfully and knowingly manufactures or sells, or offers for sale, or has in his possession with intent to sell, any such equipment subject to the provisions of title 52 of the Revised Statutes, as amended, which is so defective as to be inefficient to accomplish the purpose for which it is intended, shall be fined, the bill provides, not more than \$10,000 and may, in addition, be imprisoned for a term not exceeding 5 years.

Section 2 of the bill provides that, to the extent that any existing provision of law, or any rule or regulation prescribed pursuant thereto, is in conflict with any provision of section 4488 of the Revised Statutes (46 U.S.C. 481), such section as amended by this act, and the rules and regulations hereafter prescribed pursuant thereto, shall prevail.

Section 3(a) of the bill repeals the following acts or parts of acts and all amendments thereto:

Sections 4470, 4471, 4479, 4481, 4482, 4483, and 4492 of the Revised Statutes (46 U.S.C. 463, 464, 472, 474, 475, 476, and 490);

Section 2(a) of the act of October 9, 1940 (ch. 77, 54 Stat. 1028; 46 U.S.C. 463a); and

Section 11 of the act of May 28, 1908 (ch. 212, 35 Stat. 428; 46 U.S.C. 396).

Section 4 of the bill provides that any rights or liabilities existing on the effective date of this act shall not be affected by the enactment of this act, and that any procedures or rules or regulations in effect on the effective date of this act shall remain in effect until modified or suspended under the authority of this act.

REASONS FOR ENACTMENT

As stated by the Acting Secretary of the Treasury, Mr. T. Graydon Upton, in his letter requesting introduction of the bill—

The purpose of this proposal is to revise the archaic and preclusive regulations relating to lifesaving appliances on ocean, lake, and sound steamers and foreign vessels. * * * With the * * * ratification of the 1929 and 1948 International Conventions for the Safety of Life at Sea, the provisions of Revised Statutes 4488 should have been amended to reflect the changes in lifesaving appliances these conventions had adopted. * * * The detailed statutory regulations of Revised Statutes 4488 are archaic today and restrict the progress of science and industry as it applies to safety of life at sea.

The memorandum accompanying the Acting Secretary's letter, which is part of this report, goes into detail both as to the need for revision and for repeal of existing statutes which are inadequate or unnecessary.

The report of the Secretary of Commerce recommends favorable consideration of the bill, pointing out that—

The bill would repeal certain inadequate and obsolete statutory provisions relating to safety equipment and systems aboard vessels. * * * Some of these statutes were enacted more than a half century ago, are now obsolete or of limited applicability due to advances in science, and should be repealed as they no longer serve a useful purpose.

The letter and memorandum from the Department of the Treasury, and the report of the Secretary of Commerce follow:

OFFICE OF THE SECRETARY OF THE TREASURY,
Washington, D.C., May 22, 1959.

THE PRESIDENT OF THE SENATE.

SIR: There is transmitted herewith a draft of a proposed bill to amend section 4488 of the Revised Statutes, as amended, to authorize the Secretary of the Department in which the Coast Guard is operating to prescribe regulations governing lifesaving equipment, fire-fighting equipment, muster lists, ground tackle, hawsers, and bilge systems aboard vessels, and for other purposes.

The purpose of this proposal is to revise the archaic and preclusive regulations relating to lifesaving appliances on ocean, lake, and sound steamers and foreign vessels through a consolidation and a broader application of certain statutes which relate to lifesaving appliances, firefighting equipment, muster lists, ground tackle, hawsers, and bilge systems aboard vessels.

Items contained in the International Convention for Safety of Life at Sea, 1914, were adopted as regulations by the Congress and enacted into law by the act of March 4, 1915. The 1914 convention was never put into force due to the hostilities during World War I. With the later ratification of the 1929 and 1948 International Conventions for the Safety of Life at Sea, the provisions of Revised Statutes 4488 should have been amended to reflect the changes in lifesaving appliances these conventions had adopted. Rather than amending the law, the requirements of the conventions were established through promulgation of regulations pursuant to the enabling provisions of Revised Statutes 4488.

The detailed statutory regulations of Revised Statutes 4488 are archaic today and restrict the progress of science and industry as it applies to safety of life at sea. The proposal would be a return to the basic enabling statute without its encumbering regulations but with its substantive amendments and a consolidation of other laws closely related and falling within the scope of the subject matter covered. A memorandum attached sets forth in greater detail the need for and the nature of this proposal.

It would be appreciated if you would lay the proposed bill before the Senate. A similar proposed bill has been transmitted to the Speaker of the House of Representatives.

The Department has been advised by the Bureau of the Budget that there is no objection to the submission of this proposed legislation to the Congress.

Very truly yours,

T. GRAYDON UPTON,
Acting Secretary of the Treasury.

MEMORANDUM RE PROPOSED BILL TO AMEND SECTION 4488 OF THE REVISED STATUTES, AS AMENDED, TO AUTHORIZE THE SECRETARY OF THE DEPARTMENT IN WHICH THE COAST GUARD IS OPERATING TO PRESCRIBE REGULATIONS GOVERNING LIFESAVING EQUIPMENT, FIREFIGHTING EQUIPMENT, MUSTER LISTS, GROUND TACKLE, HAWSERS, AND BILGE SYSTEMS ABOARD VESSELS, AND FOR OTHER PURPOSES

As originally enacted Revised Statute 4488 was essentially an enabling act, leaving the details of specifications and methods to regulations promulgated by the Board of Supervising Inspectors (now the U.S. Coast Guard). This act was amended by the act of March 2, 1889, which required the carriage of line-carrying projectiles and the means of propelling them. It was again amended by the act of March 3, 1905, which required that a life preserver be carried on board for each person permitted on board; also, this amendment contained provisions penalizing those manufacturing, selling, or intending to sell unsafe lifesaving appliances or fire prevention equipment.

Due to the hostilities of World War I, the International Convention for Safety of Life at Sea, 1914, was never put into force. However, the Congress adopted certain items of this convention as regulations amending Revised Statutes 4488 (act of March 4, 1915). At that time similar requirements were also adopted to cover domestic vessels other than those in river service. These latter were covered broadly, the detailed requirements being left to regulations of the supervising inspectors.

With the ratification of the 1929 International Convention for Safety of Life at Sea, the changes in lifesaving appliances (lifeboat equipment, increased buoyancy in lifejackets and ring buoys, increased number of ring buoys, etc.) required were not incorporated in Revised Statutes 4488 as substantive law. The changes were instead reflected in regulations promulgated by the Board of Supervising Inspectors pursuant to the enabling authority contained in Revised Statutes 4488. This resulted in regulations which were in many respects incompatible with the law authorizing them, yet consistent with international agreement.

The confusion was compounded upon ratification of the 1948 International Convention for Safety of Life at Sea. For instance, Revised Statutes 4488 sets forth details for lifeboats with external buoyancy and collapsible sides, whereas the 1948 convention permits only internal buoyancy and fixed sides. Revised Statutes 4488 requires an oceangoing cargo vessel to have 100 percent lifeboatage, whereas the 1948 convention calls for 200 percent. As with the 1929 convention, no attempt was made to amend the details of Revised Statutes 4488, particularly the regulations contained therein. Coast Guard regulations issued under authority of the "enabling" portion of

Revised Statutes 4488 implemented the requirements of the 1948 convention.

Inasmuch as the greater portion of the regulations contained in Revised Statutes 4488 serve only to hamper an intelligent and progressive administration of safety requirements as dictated by changing modern demands, abolishment of the regulations is long overdue. An enabling act with penalty provision included will permit adherence to international obligations and allow the flexibility so sorely needed. Protection from arbitrary or capricious regulations is adequately provided for through the Administrative Procedure Act.

The following statutes are either inadequate or unnecessary by reason of limited applicability due to advances achieved in science and industry or their supersession by later laws of broader scope. They should be repealed.

Revised Statutes 4470 (46 U.S.C. 463): This statute relates to requirements for steam smothering systems. Regulations governing fire prevention and fire extinguishing are promulgated presently under the broad authority of the act of October 9, 1940 (54 Stat. 1028; 46 U.S.C. 463a). The statute is no longer necessary.

Revised Statutes 4471 (46 U.S.C. 464): This statute relates to fire pumps on steamers carrying 50 or more passengers, and on steamers carrying passengers which also carry cotton, hay, or hemp. It further requires sprinklers on vessels of wooden construction. The statute is archaic and its requirements are considerably below present standards set by the Coast Guard in regulations promulgated under the act of October 9, 1940 (54 Stat. 1028; 46 U.S.C. 463a). The statute is not necessary.

Revised Statutes 4479 (46 U.S.C. 472): This statute relates to the carriage of portable fire extinguishers on steamers. It is in effect an act authorizing promulgation of regulations but of limited scope. The statute is inadequate and unnecessary.

Revised Statutes 4481 (46 U.S.C. 474): This statute relates to lifesaving equipment for certain river vessels. It requires, among other things, that each passenger vessel should have at least one "metallic lifeboat." The statute as written precludes use of plastic or composition lifeboats. It has limited application and has not been employed by the Coast Guard in regulating lifesaving equipment aboard river steamers. It is archaic and unnecessary.

Revised Statutes 4482 (46 U.S.C. 475): This statute relates to the carriage of life preservers for passengers and crew on board river steamers. Floats are authorized in lieu of life preservers. The statute will be unnecessary in the event of enactment of the instant proposal.

Revised Statutes 4483 (46 U.S.C. 476): This statute relates to the carriage of fire buckets, axes and water barrels on board passenger-carrying river steamers. It is archaic. The provisions of the statute relating to fire buckets and water barrels is no longer enforced and fire axes are required on board all vessels pursuant to the provisions of the act of October 9, 1940 (54 Stat. 1028; 46 U.S.C. 463a).

Revised Statutes 4492 (46 U.S.C. 490): This statute relates to the carriage of fire buckets, axes, water barrels, life preservers, and yawls on board barges carrying passengers while in tow of any steamer. The statute is archaic. Its standards are below those prescribed by the Coast Guard in regulations governing lifesaving and firefighting

equipment aboard vessels generally. The statute is too restrictive in its coverage.

Act of October 9, 1940, section 2(a) (54 Stat. 1028; 46 U.S.C. 463a): This statute is in effect an act enabling the promulgation of regulations by the Board of Supervising Inspectors (now the Coast Guard) governing fire prevention and fire protection. Inasmuch as Revised Statute 4488 in its present form contains some fire protection requirements, combining the two statutes will eliminate the need for this one.

Act of May 28, 1908, section 11 (35 Stat. 428; 46 U.S.C. 396): This statute requires seagoing barges to carry certain appliances (lifeboat, anchor, chain, and preservers) of a kind approved by the Coast Guard. The statute is restrictive, precluding the prescription of more modern equipment. The statute lacks the flexibility necessary to adequately administer a safety program aboard this type of vessel.

THE SECRETARY OF COMMERCE,
Washington, D.C., July 2, 1959.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Interstate and Foreign Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This letter is in reply to your request of June 5, 1959, for the views of this Department with respect to S. 2118, a bill to amend section 4488 of the Revised Statutes, as amended, to authorize the Secretary of the department in which the Coast Guard is operating to prescribe regulations governing lifesaving equipment, firefighting equipment, muster lists, ground tackle, hawsers, and bilge systems aboard vessels, and for other purposes.

This Department recommends favorable consideration of the bill.

The bill would repeal certain inadequate and obsolete statutory provisions relating to safety equipment and systems aboard vessels. If the bill is enacted, the Secretary of the Treasury would be authorized to prescribe rules and regulations as necessary in the public interest, for safety features on vessels subject to inspection and certification by the U.S. Coast Guard.

The statutes to be repealed deal with lifesaving appliances on ocean, lake, and river vessels, and foreign vessels leaving ports of the United States. They are set forth by title and section in the bill. Some of these statutes were enacted more than a half century ago, are now obsolete or of limited applicability due to advances in science, and should be repealed as they no longer serve a useful purpose.

The obsolescence of the statutes the bill would repeal has arisen from technological advancements in recent years in lifesaving and firefighting equipment for vessels. Many of these statutes do not reflect the higher standards for safety requirements established at the International Conventions for Safety of Life at Sea, to which the United States is a signatory.

This Department advocates the principle of safety of life at sea wherever possible. The bill would be in keeping with this view. We therefore recommend it be given favorable consideration.

We have been advised by the Bureau of the Budget that it would interpose no objection to the submission of this report to your committee.

Sincerely yours,

FREDERICK H. MUELLER,
Acting Secretary of Commerce.

COMPTROLLER GENERAL OF THE UNITED STATES,

Washington, D.C., June 23, 1959.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Interstate and Foreign Commerce,
U.S. Senate.

DEAR MR. CHAIRMAN: Further reference is made to your letter of June 5, 1959, acknowledged on June 8, requesting the comments of the General Accounting Office concerning S. 2118, 86th Congress, 1st session, entitled "A bill to amend section 4488 of the Revised Statutes, as amended, to authorize the Secretary of the department in which the Coast Guard is operating to prescribe regulations governing lifesaving equipment, firefighting equipment, muster lists, ground tackle, hawsers, and bilge systems aboard vessels, and for other purposes."

We have no special information or knowledge as to the need for or desirability of the proposed legislation and, therefore, we make no recommendation with respect to its enactment.

Sincerely yours,

JOSEPH CAMPBELL,

Comptroller General of the United States.

CHANGES IN EXISTING LAW

In compliance with subsection 4 of rule XXIX of the Standing Rules of the Senate, changes in existing law made by the bill are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, and existing law in which no changes is proposed is shown in roman):

[REVISED STATUTES 4488—46 U.S.C. 481

[Every steamer navigating the ocean, or any lake, bay, or sound of the United States, shall be provided with such numbers of lifeboats, floats, rafts, life preservers, line-carrying projectiles, and the means of propelling them, and drags, as will best secure the safety of all persons on board such vessels in case of disaster; and every seagoing vessel carrying passengers, and every such vessel navigating any of the northern or northwestern lakes, shall have the lifeboats required by law, provided with suitable boat-disengaging apparatus, so arranged as to allow such boats to be safely launched. And the Board of Supervising Inspectors shall fix and determine, by their rules and regulations, the character and arrangement of boat-disengaging apparatus and the character of lifeboats, floats, rafts, life preservers, line-carrying projectiles, and the means of propelling them, and drags that shall be used on such vessels, and also the character and capacity of pumps or other appliances for freeing the steamer from water in case of heavy leakage, the capacity of such pumps or appliances being suited to the navigation in which the steamer is employed. Every vessel subject to the provisions of this title shall, while in operation, carry one life preserver for each and every person allowed to be carried on said vessel by the certificate of inspection, including each member of the crew: *Provided, however,* That upon such vessels and under such conditions as are specified in section forty-four hundred and eighty-two floats may be substituted for life preservers. Any person who willfully

and knowingly manufactures or sells, or offers for sale, or has in his possession with intent to sell, life preservers containing metal or other nonbuoyant material, for the purpose of increasing the weight thereof, or more metal or other such material than is reasonably necessary for the construction thereof, or who shall so manufacture, sell, offer for sale, or possess with intent to sell any other articles commonly used for preservation of life or the prevention of fire on board vessels subject to the provisions of this title, which articles shall be so defective as to be inefficient to accomplish the purposes for which they are respectively intended and designed, shall upon conviction, be fined not more than two thousand dollars, and may, in addition thereto, in the discretion of the court, be imprisoned not exceeding five years.

[The powers bestowed by this section upon the Board of Supervising Inspectors in respect of lifeboats, floats, rafts, life preservers, and other lifesaving appliances and equipment, and the further requirements herein as to davits, embarkation of passengers in lifeboats and rafts, and the manning of lifeboats and rafts, and the musters and drills of the crews, on steamers navigating the ocean, or any lake, bay, or sound of the United States, on and after July first, nineteen hundred and fifteen, shall be subject to the provisions, limitations, and minimum requirements of the regulations herein set forth, and all such vessels shall thereafter be required to comply in all respects therewith: *Provided*, That foreign vessels leaving ports of the United States shall comply with the rules herein prescribed as to life-saving appliances, their equipment, and the manning of same.

[REGULATIONS

[LIFE-SAVING APPLIANCES

[STANDARD TYPES OF BOATS

[The standard types of boats classified as follows:

[Class	Section	Type
[I (Entirely rigid sides) -----	{	A. Open. Internal buoyancy only.
		B. Open. Internal and external buoyancy.
		C. Pontoon. Well deck; fixed water-tight bulwarks.
[II (Partially collapsible sides) --	{	A. Open. Upper part of sides collapsible.
		B. Pontoon. Well deck, collapsible water-tight bulwarks.
		C. Pontoon. Flush deck; collapsible water-tight bulwarks.

[STRENGTH OF BOATS

[Each boat must be of sufficient strength to enable it to be safely lowered into the water when loaded with its full complement of persons and equipment.

[ALTERNATIVE TYPES OF BOATS AND RAFTS]

[Any type of boat may be accepted as equivalent to a boat of one of the prescribed classes and any type of raft as equivalent to an approved pontoon raft, if the Board of Supervising Inspectors, with the approval of the Secretary of Commerce, is satisfied by suitable trials that it is as effective as the standard types of the class in question, or as the approved type of pontoon raft, as the case may be.

[Motor boats may be accepted if they comply with the requirements laid down for boats of the first class, but only to a limited number, which number shall be determined by the Board of Supervising Inspectors, with the approval of the Secretary of Commerce.

[No boat may be approved the buoyancy of which depends upon the previous adjustment of one of the principal parts of the hull or which has not a cubic capacity of at least one hundred and twenty-five cubic feet.

[BOATS OF THE FIRST CLASS]

[The standard types of boats of the first class must satisfy the following conditions:

[1A.—*Open boats with internal buoyancy only*]

[The buoyancy of a wooden boat of this type shall be provided by water-tight air cases, the total volume of which shall be at least equal to one-tenth of the cubic capacity of the boat.

[The buoyancy of a metal boat of this type shall not be less than that required above for a wooden boat of the same cubic capacity, the volume of water-tight air cases being increased accordingly.

[1B.—*Open boats with internal and external buoyancy*]

[The internal buoyancy of a wooden boat of this type shall be provided by water-tight air cases, the total volume of which is at least equal to seven and one-half per centum of the cubic capacity of the boat.

[The external buoyancy may be of cork or of any other equally efficient material, but such buoyancy shall not be secured by the use of rushes, cork shavings, loose granulated cork, or any other loose granulated substance, or by any means dependent upon inflation by air.

[If the buoyancy is of cork, its volume, for a wooden boat, shall not be less than thirty-three thousandths of the cubic capacity of the boat; if of any material other than cork, its volume and distribution shall be such that the buoyancy and stability of the boat are not less than that of a similar boat provided with buoyancy of cork.

[The buoyancy of a metal boat shall be not less than that required above for a wooden boat of the same cubic capacity, the volume of the air cases and external buoyancy being increased accordingly.

[1C.—*Pontoon boats, in which persons can not be accommodated below the deck, having a well deck and fixed watertight bulwarks*]

[The area of the well deck of a boat of this type shall be at least thirty per centum of the total deck area. The height of the well deck above the water line at all points shall be at least equal to one-

half per centum of the length of the boat, this height being increased to one and one-half per centum of the length of the boat at the ends of the well.

【The freeboard of a boat of this type shall be such as to provide for a reserve buoyancy of at least thirty-five per centum.

【BOATS OF THE SECOND CLASS

【The standard types of boats of the second class must satisfy the following conditions:

【2A.—*Open boats having the upper part of the sides collapsible*

【A boat of this type shall be fitted both with water-tight air cases and with external buoyancy, the volume of which, for each person which the boat is able to accommodate, shall be at least equal to the following amounts: Air cases, one and five-tenths cubic feet; external buoyancy (if of cork), two-tenths cubic foot.

【The minimum freeboard of boats of this type is fixed in relation to their length; it is measured vertically to the top of the solid hull at the side amidships, from the water level when the boat is loaded.

【The freeboard in fresh water shall not be less than the following amounts:

Length of the boat	Minimum freeboard
<i>Feet</i>	<i>Inches</i>
26	8
28	9
30	10

【The freeboard of boats of intermediate lengths is to be found by interpolation.

【2B.—*Pontoon boats having a well deck and collapsible bulwarks*

【All the conditions laid down for boats of type 1C are to be applied to boats of this type, which differ from those of type 1C only in regard to the bulwarks.

【2C.—*Pontoon boats, in which the persons can not be accommodated below deck, having a flush deck and collapsible bulwarks*

【The minimum freeboard of boats of this type is independent of their lengths and depends only upon their depth. The depth of the boat is to be measured vertically from the underside of the garboard strake to the top of the deck on the side amidships, and the freeboard is to be measured from the top of the deck at the side amidships to the water level when the boat is loaded.

【The freeboard in fresh water shall not be less than the following amounts, which are applicable without correction to boats having a mean sheer equal to three per centum of their length:

Depth of boat	Minimum freeboard
<i>Inches</i>	<i>Inches</i>
12	23 $\frac{3}{4}$
18	33 $\frac{3}{4}$
20	51 $\frac{1}{2}$
30	61 $\frac{1}{2}$

For intermediate depths the freeboard is obtained by interpolation.

If the sheer is less than the standard sheer defined above, the minimum freeboard is obtained by adding to the figures in the table one-seventh of the difference between the standard sheer and the actual mean sheer measured at the stem and sternpost. No deduction is to be made from the freeboard on account of the sheer being greater than the standard sheer or on account of the camber of the deck.

MOTOR BOATS

When motor boats are accepted, the volume of internal buoyancy and, when fitted, the external buoyancy, must be fixed, having regard to the difference between the weight of the motor and its accessories and the weight of the additional persons which the boat could accommodate if the motor and its accessories were removed.

ARRANGEMENTS FOR CLEARING PONTOON LIFEBOATS OF WATER

All pontoon lifeboats shall be fitted with efficient means for quickly clearing the deck of water. The orifices for this purpose shall be such that the water cannot enter the boat through them when they are intermittently submerged. The number and size of the orifices shall be determined for each type of boat by a special test.

For the purpose of this test the pontoon boat shall be loaded with a weight of iron or bags of sand, equal to that of its complement of persons and equipment.

In the case of a boat twenty-eight feet in length two tons of water shall be cleared from the boat in a time not exceeding the following: type 1C, sixty seconds; type 2B, sixty seconds; type 2C, twenty seconds.

In the case of a boat having a length greater or less than twenty-eight feet the weight of water to be cleared in the same time shall be, for each type, directly proportional to the length of the boat.

CONSTRUCTION OF BOATS

Open lifeboats of the first class (types 1A and 1B) must have a mean sheer at least equal to four per centum of their length.

The air cases of open boats of the first class shall be placed along the sides of the boat; they may also be placed at the ends of the boat, but not in the bottom of the boat.

Pontoon lifeboats may be built of wood or metal. If constructed of wood, they shall have the bottom and deck made of two thicknesses with textile material between; if of metal, they shall be divided into water-tight compartments with means of access to each compartment.

All boats shall be fitted for the use of a steering oar.

PONTOON RAFTS

No type of pontoon raft may be approved unless it satisfies the following conditions:

First. It should be reversible and fitted with bulwarks of wood, canvas, or other suitable material on both sides. These bulwarks may be collapsible.

[Second. It should be of such size, strength, and weight that it can be handled without mechanical appliances, and, if necessary, be thrown from the vessel's deck.

[Third. It should have not less than three cubic feet of air cases or equivalent buoyancy for each person whom it can accommodate.

[Fourth. It should have a deck area of not less than four square feet for each person whom it can accommodate and the platform should not be less than six inches above the water level when the raft is loaded.

[Fifth. The air cases or equivalent buoyancy should be placed as near as possible to the sides of the raft.

[CAPACITY OF BOATS AND PONTOON RAFTS

[First. The number of persons which a boat of one of the standard types or a pontoon raft can accommodate is equal to the greatest whole number obtained by dividing the capacity in cubic feet, or the surface in square feet, of the boat or of the raft by the standard unit of capacity, or unit of surface (according to circumstances), defined below for each type.

[Second. The cubic capacity in feet of a boat in which the number of persons is determined by the surface shall be assumed to be ten times the number of persons which it is authorized to carry.

[Third. The standard units of capacity and surface are as follows:

[Units of capacity, open boats, type 1A, ten cubic feet; open boats, type 1B, nine cubic feet.

[Unit of surface, open boats, type 2A, three and one-half square feet; pontoon boats, type 2C, three and one-half square feet; pontoon boats, type 1C, three and one-fourth square feet; pontoon boats, type 2B, three and one-fourth square feet.

[Fourth. The board of supervising inspectors, with the approval of the Secretary of Commerce, may accept, in place of three and one-fourth, a smaller divisor, if it is satisfied after trial that the number of persons for whom there is seating accommodation in the pontoon boat in question is greater than the number obtained by applying the above divisor, provided always that the divisor adopted in place of three and one-fourth may never be less than three.

[CAPACITY LIMITS

[Pontoon boats and pontoon rafts shall never be marked with a number of persons greater than that obtained in the manner specified in this section.

[This number shall be reduced—

[First. When it is greater than the number of persons for which there is proper seating accommodation, the latter number being determined in such a way that the persons when seated do not interfere in any way with the use of the oars.

[Second. When in the case of boats other than those of the first two sections of the first class, the freeboard, when the boat is fully loaded, is less than the freeboard laid down for each type respectively. In such circumstances the number shall be reduced until the freeboard, when the boat is fully loaded, is at least equal to the standard freeboard laid down above.

[In boats of types 1C and 2B the raised part of the deck at the sides may be regarded as affording seating accommodation.

[EQUIVALENTS FOR AND WEIGHT OF THE PERSONS

[In test for determining the number of persons which a boat or pontoon raft can accommodate each person shall be assumed to be an adult person wearing a life jacket.

[In verifications of freeboard the pontoon boats shall be loaded with a weight of at least one hundred and sixty-five pounds for each adult person that the pontoon boat is authorized to carry.

[In all cases two children under twelve years of age shall be reckoned as one person.

[CUBIC CAPACITY OF OPEN BOATS OF THE FIRST CLASS

[First. The cubic capacity of an open boat of type 1A or 1B shall be determined by Stirling's (Simpson's) rule or by any other method, approved by the Board of Supervising Inspectors, giving the same degree of accuracy. The capacity of a square-sterned boat shall be calculated as if the boat had a pointed stern.

[Second. For example, the capacity in cubic feet of a boat, calculated by the aid of Stirling's rule, may be considered as given by the following formula:

$$[\text{Capacity} = \frac{1}{12} (4A + 2B + 4C)$$

1 being the length of the boat in meters (or feet) from the inside of the planking or plating at the stem to the corresponding point at the stern post; in the case of a boat with a square stern, the length is measured to the inside of the transom.

[A, B, C denote, respectively, the areas of the cross sections at the quarter length forward, amidships, and the quarter length aft, which correspond to the three points obtained by dividing 1 into four equal parts. (The areas corresponding to the two ends of the boat are considered negligible.)

[The areas A, B, C shall be deemed to be given in square feet by the successive application of the following formula to each of the three cross sections:

$$[\text{Area} = \frac{h}{12} (a + 4b + 2c + 4d - e)$$

[h being the depth measured in meters (or in feet) inside the planking or plating from the keel to the level of the gunwale, or, in certain cases, to a lower level, as determined hereafter.

[a, b, c, d, e denote the horizontal breadths of the boat measured in feet at the upper and lower points of the depth and at the three points obtained by dividing h into four equal parts (a and e being the breadths at the extreme points, and c at the middle point, of h).

[Third. If the sheer of the gunwale, measured at the two points situated at a quarter of the length of the boat from the ends, exceeds one per centum of the length of the boat, the depth employed in calculating the area of the cross sections A or C shall be deemed to be the depth amidships plus one per centum of the length of the boat.

[Fourth. If the depth of the boat amidships exceeds forty-five per centum of the breadth, the depth employed in calculating the area of the midship cross section B shall be deemed to be equal to forty-five per centum of the breadth; and the depth employed in calculating the

areas of the quarter-length sections A and C is obtained by increasing this last figure by an amount equal to one per centum of the length of the boat, provided that in no case shall the depths employed in the calculation exceed the actual depths at these points.

【Fifth. If the depth of the boat is greater than four feet, the number of persons given by the application of this rule shall be reduced in proportion to the ratio of four feet to the actual depth, until the boat has been satisfactorily tested afloat with that number of persons on board all wearing life jackets.

【Sixth. The Board of Supervising Inspectors shall impose, by suitable formulae, a limit for the number of persons allowed in boats with very fine ends and in boats very full in form.

【Seventh. The Board of Supervising Inspectors may by regulation assign to a boat a capacity equal to the product of the length, the breadth, and the depth multiplied by six-tenths if it is evident that this formula does not give a greater capacity than that obtained by the above method. The dimensions shall then be measured in the following manner:

【Length. From the intersection of the outside of the planking with the stem to the corresponding point at the sternpost or, in the case of a square-sterned boat, to the afterside of the transom.

【Breadth. From the outside of the planking at the point where the breadth of the boat is greatest.

【Depth. Amidships inside the planking from the keel to the level of the gunwale, but the depth used in calculating the cubic capacity may not in any case exceed forty-five per centum of the breadth.

【In all cases the vessel owner has the right to require that the cubic capacity of the boat shall be determined by exact measurement.

【Eighth. The cubic capacity of a motor boat is obtained from the gross capacity by deducting a volume equal to that occupied by the motor and its accessories.

【DECK AREA OF PONTOON BOATS AND OPEN BOATS OF THE SECOND CLASS

【First. The area of the deck of a pontoon boat of type 1C, 2B, or 2C shall be determined by the method indicated below or by any other method giving the same degree of accuracy. The same rule is to be applied in determining the area within the fixed bulwarks of a boat of type 2A.

【Second. For example, the surface in square feet of a boat may be deemed to be given by the following formula:

$$\text{【Area} = \frac{1}{12}(2a + 1.5b + 4c + 1.5d + 2e)$$

【l being the length in feet from the intersection of the outside of the planking with the stem to the corresponding point at the sternpost.

【a, b, c, d, e denote the horizontal breadths in feet outside the planking at the points obtained by dividing l into four equal parts and subdividing the foremost and aftermost parts into two equal parts (a and e being the breadths at the extreme subdivisions, c at the middle point of the length, and b and d at the intermediate points).

[MARKING OF BOATS AND PONTOON RAFTS]

[The dimensions of the boat and the number of persons which it is authorized to carry shall be marked on it in clear, permanent characters, according to regulations by the Board of Supervising Inspectors, approved by the Secretary of Commerce. These marks shall be specifically approved by the officers appointed to inspect the ship.

[Pontoon rafts shall be marked with the number of persons in the same manner.

[EQUIPMENT OF BOATS AND PONTOON RAFTS]

[First. The normal equipment of every boat shall consist of—

[(a) A single banked complement of oars and two spare oars; one set and a half of thole pins or crutches; a boat hook.

[(b) Two plugs for each plug hole (plugs are not required when proper automatic valves are fitted); a bailer and a galvanized-iron bucket.

[(c) A tiller or yoke and yoke lines.

[(d) Two hatchets.

[(e) A lamp filled with oil and trimmed.

[(f) A mast or masts with one good sail at least, and proper gear for each. (This does not apply to motor lifeboats or lifeboats on the Great Lakes or other inland waters.)

[(g) A suitable compass.

[Pontoon lifeboats will have no plug hole, but shall be provided with at least two bilge pumps.

[In the case of a steamer which carries passengers in the North Atlantic, all the boats need not be equipped with masts, sails, and compasses, if the ship is provided with a radiotelegraph installation.

[Second. The normal equipment of every approved pontoon raft shall consist of—

[(a) Four oars.

[(b) Five rowlocks.

[(c) A self-igniting life-buoy light.

[Third. In addition, every boat and every pontoon raft shall be equipped with—

[(a) A life line becketed around the outside.

[(b) a sea anchor.

[(c) A painter.

[(d) A vessel containing one gallon of vegetable or animal oil. The vessel shall be so constructed that the oil can be easily distributed on the water and so arranged that it can be attached to the sea anchor.

[(e) A water-tight receptacle containing two pounds avoirdupois of provisions for each person, except on vessels navigating fresh water.

[(f) A water-tight receptacle containing one quart for each person, except on vessels navigating fresh water.

[(g) A number of self-igniting "red lights" and a water-tight box of matches.

[Fourth. All loose equipment must be securely attached to the boat or pontoon raft to which it belongs.

[STOWAGE OF BOATS—NUMBER OF DAVITS]

[The minimum number of sets of davits is fixed in relation to the length of the vessel; provided that a number of sets of davits greater

than the number of boats necessary for the accommodation of all the persons on board may not be required.

[HANDLING OF THE BOATS AND RAFTS

[All the boats and rafts must be stowed in such a way that they can be launched in the shortest possible time and that, even under unfavorable conditions of list and trim from the point of view of the handling of the boats and rafts, it may be possible to embark in them as large a number of persons as possible.

[The arrangements must be such that it may be possible to launch on either side of the vessels as large a number of boats and rafts as possible.

[STRENGTH AND OPERATION OF THE DAVITS

[The davits shall be of such strength that the boats can be lowered with their full complement of persons and equipment, the vessel being assumed to have a list of fifteen degrees.

[The davits must be fitted with a gear of sufficient power to insure that the boat can be turned out against the maximum list under which the lowering of the boat is possible on the vessel in question.

[OTHER APPLIANCES EQUIVALENT TO DAVITS

[Any appliance may be accepted in lieu of davits or sets of davits if the Board of Supervising Inspectors, with the approval of the Secretary of Commerce, is satisfied after proper trials that the appliance in question is as effective as davits for placing the boats in the water.

[DAVITS

[Each set of davits shall have a boat of the first class attached to it, provided that the number of open boats of the first class attached to davits shall not be less than the minimum number fixed by the table which follows.

[If it is neither practicable nor reasonable to place on a vessel the minimum number of sets of davits required by the rules, the Board of Supervising Inspectors, with the approval of the Secretary of Commerce, may authorize a smaller number of sets of davits to be fitted, provided always that this number shall never be less than the minimum number of open boats of the first class required by the rules.

[If a large proportion of the persons on board are accommodated in boats whose length is greater than fifty feet, a further reduction in the number of sets of davits may be allowed exceptionally, if the Board of Supervising Inspectors, with the approval of the Secretary of Commerce, is satisfied that the arrangements are in all respects satisfactory.

[In all cases in which a reduction in the minimum number of sets of davits or other equivalent appliances required by the rules is allowed, the owner of the vessel in question shall be required to prove, by a test made in the presence of an officer designated by the Supervising Inspector General, that all the boats can be efficiently launched in a minimum time.

[The conditions of this test shall be as follows:

[First. The vessel is to be upright and in smooth water.

【Second. The time is the time required from the beginning of the removal of the boat covers, or any other operation necessary to prepare the boats for lowering, until the last boat or pontoon raft is afloat.

【Third. The number of men employed in the whole operation must not exceed the total number of boat hands that will be carried on the vessel under normal service conditions.

【Fourth. Each boat when being lowered must have on board at least two men and its full equipment as required by the rules.

【The time allowed for putting all the boats into the water shall be fixed by the Board of Supervising Inspectors, with the approval of the Secretary of Commerce.

【MINIMUM NUMBER OF DAVITS AND OF OPEN BOATS OF THE
FIRST CLASS—MINIMUM BOAT CAPACITY

【The following table fixes, according to the length of the vessel—

【(A) The minimum number of sets of davits to be provided, to each of which must be attached a boat of the first class in accordance with this section.

【(B) The minimum total number of open boats of the first class, which must be attached to davits, in accordance with this section.

【(C) The minimum boat capacity required, including the boats attached to davits and the additional boats, in accordance with this section.

Registered length of the ship (feet)	Minimum number of sets of davits	Minimum number of open boats of the 1st class	Minimum capacity of lifeboats
			<i>Cubic feet</i>
100 and less than 120	2	2	980
120 and less than 140	2	2	1,220
140 and less than 160	2	2	1,550
160 and less than 175	3	3	1,880
175 and less than 190	3	3	2,390
190 and less than 205	4	4	2,740
205 and less than 220	4	4	3,330
220 and less than 230	5	4	3,900
230 and less than 245	5	4	4,560
245 and less than 255	6	5	5,100
255 and less than 270	6	5	5,640
270 and less than 285	7	5	6,190
285 and less than 300	7	5	6,930
300 and less than 315	8	6	7,550
315 and less than 330	8	6	8,290
330 and less than 350	9	7	9,000
350 and less than 370	9	7	9,630
370 and less than 390	10	7	10,650
390 and less than 410	10	7	11,700
410 and less than 435	12	9	13,060
435 and less than 460	12	9	14,430
460 and less than 490	14	10	15,920
490 and less than 520	14	10	17,310
520 and less than 550	16	12	18,720
550 and less than 580	16	12	20,350
580 and less than 610	18	13	21,900
610 and less than 640	18	13	23,700
640 and less than 670	20	14	25,350
670 and less than 700	20	14	27,050
700 and less than 730	22	15	28,560
730 and less than 760	22	15	30,180
760 and less than 790	24	17	32,100
790 and less than 820	24	17	34,350
820 and less than 855	26	18	36,450
855 and less than 890	26	18	38,750
890 and less than 925	28	19	41,000
925 and less than 960	28	19	43,880
960 and less than 995	30	20	46,350
995 and less than 1,030	30	20	48,750

[When the length of the vessel exceeds one thousand and thirty feet, the Board of Supervising Inspectors, with the approval of the Secretary of Commerce, shall determine the minimum number of sets of davits and of open boats of the first class for that vessel.

[EMBARCATION OF THE PASSENGERS IN THE LIFEBOATS AND RAFTS

[Suitable arrangements shall be made for embarking the passengers in the boats, in accord with regulations by the Board of Supervising Inspectors, with the approval of the Secretary of Commerce.

[In vessels which carry rafts there shall be a number of rope or wooden ladders always available for use in embarking the persons on to the rafts.

[The number and arrangement of the boats, and (where they are allowed) of the pontoon rafts, on a vessel depends upon the total number of persons which the vessel is intended to carry: *Provided*, That there shall not be required on any voyage a total capacity in boats, and (where they are allowed) pontoon rafts, greater than that necessary to accommodate all the persons on board.

[At no moment of its voyage shall any passenger steam vessel of the United States on ocean routes more than twenty nautical miles offshore have on board a total number of persons greater than that for whom accommodation is provided in the lifeboats and pontoon life rafts on board.

[If the lifeboats attached to davits do not provide sufficient accommodation for all persons on board, additional lifeboats of one of the standard types shall be provided. This addition shall bring the total capacity of the boats on the vessel at least up to the greater of the two following amounts:

[*(a)* The minimum capacity required by these regulations;

[*(b)* A capacity sufficient to accommodate seventy-five per centum of the persons on board.

[The remainder of the accommodation required shall be provided, under regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce, either in boats of class one or class two, or in pontoon rafts of an approved type.

[At no moment of its voyage shall any passenger steam vessel of the United States on ocean routes less than twenty nautical miles offshore have on board a total number of persons greater than that for whom accommodation is provided in the lifeboats and pontoon rafts on board. The accommodation provided in lifeboats shall in every case be sufficient to accommodate at least seventy-five per centum of the persons on board. The number and type of such lifeboats and life rafts shall be determined by regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce: *Provided*, That during the interval from May fifteenth to September fifteenth, inclusive, any passenger steam vessel of the United States, on ocean routes less than twenty nautical miles offshore, shall be required to carry accommodation for not less than seventy per centum of the total number of persons on board in lifeboats and pontoon life rafts, of which accommodation not less than fifty per centum shall be in lifeboats and fifty per centum may be in collapsible boats or rafts, under regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce.

[At no moment of its voyage may any ocean-cargo steam vessel of the United States have on board a total number of persons greater than that for whom accommodation is provided in the lifeboats on board. The number and types of such boats shall be determined by regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce.

[At no moment of its voyage may any passenger steam vessel of the United States on the Great Lakes, on routes more than three miles offshore, except over waters whose depth is not sufficient to submerge all the decks of the vessel, have on board a total number of persons, including passengers and crew, greater than that for whom accommodation is provided in the lifeboats and pontoon life rafts on board. The accommodation provided in lifeboats shall in every case be sufficient to accommodate at least seventy-five per centum of the persons on board. The number and types of such lifeboats and life rafts shall be determined by regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce: *Provided*, That during the interval from May fifteenth to September fifteenth, inclusive, any such steamer shall be required to carry accommodation for not less than fifty per centum of persons on board in lifeboats and pontoon life rafts, of which accommodation not less than two-fifths shall be in lifeboats and three-fifths may be in collapsible boats or rafts, under regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce: *Provided further*, That all passenger steam vessels of the United States, the keels of which are laid after the first of July, nineteen hundred and fifteen, for service on ocean routes, or for service from September fifteenth to May fifteenth on the Great Lakes on routes more than three miles offshore, shall be built to carry, and shall carry, enough lifeboats and life rafts to accommodate all persons on board, including passengers and crew: *And provided further*, That not more than twenty-five per centum of such equipment may be in pontoon life rafts or collapsible lifeboats.

[At no moment of its voyage may any cargo steam vessel of the United States on the Great Lakes have on board a total number of persons greater than that for whom accommodation is provided in the lifeboats on board. The number and types of such boats shall be determined by regulations of the Board of Supervising Inspectors approved by the Secretary of Commerce.

[The number, types, and capacity of lifeboats and life rafts, together with the proportion of such accommodation to the number of persons on board which shall be carried on steam vessels on the Great Lakes, on routes three miles or less offshore or over waters whose depth is not sufficient to submerge all the decks of the vessel, and on all other lakes, and on rivers, bays, and sounds, shall be determined by regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce.

[The Secretary of Commerce is authorized in specific cases to exempt existing vessels from the requirements of this section that the davits shall be of such strength and shall be fitted with a gear of sufficient power to insure that the boats can be lowered with their full complement of persons and equipment, the vessel being assumed to have a list of fifteen degrees, where their strict application would not be practicable or reasonable.

[CERTIFICATED LIFEBOAT MEN—MANNING OF THE BOATS

[There shall be for each boat or raft a number of lifeboat men at least equal to that specified as follows: If the boat or raft carries twenty-five persons or less, the minimum number of certificated lifeboat men shall be one; if the boat or raft carries twenty-six persons and less than forty-one persons the minimum number of certificated lifeboat men shall be two; if the boat or raft carries forty-one persons and less than sixty-one persons the minimum number of certificated lifeboat men shall be three; if the boat or raft carries from sixty-one to eighty-five persons, the minimum number of certificated lifeboat men shall be four; if the boat or raft carries from eighty-six to one hundred and ten persons, the minimum number of certificated lifeboat men shall be five; if the boat or raft carries from one hundred and eleven to one hundred and sixty persons, the minimum number of certificated lifeboat men shall be six; if the boat or raft carries from one hundred and sixty-one to two hundred and ten persons, the minimum number of certificated lifeboat men shall be seven; and, thereafter, one additional certificated lifeboat man for each additional fifty persons: *Provided*, That if the raft carries fifteen persons or less a licensed officer or able seaman need not be placed in charge of such raft: *Provided further*, That one-half the number of rafts carried shall have a capacity of exceeding fifteen persons.

[The allocation of the certificated lifeboat men to each boat and raft remains within the discretion of the master, according to the circumstances.

[By "certificated lifeboat man" is meant any member of the crew who holds a certificate of efficiency issued under the authority of the Secretary of Commerce, who is hereby directed to provide for the issue of such certificates.

[In order to obtain the special lifeboat man's certificate the applicant must prove to the satisfaction of an officer designated by the Secretary of Commerce that he has been trained in all the operations connected with launching lifeboats and the use of oars; that he is acquainted with the practical handling of the boats themselves; and, further, that he is capable of understanding and answering the orders relative to lifeboat service.

[Section forty-four hundred and sixty-three of the Revised Statutes as amended is hereby amended by adding the words "including certificated lifeboat men, separately stated," to the word "crew" wherever it occurs.

[MANNING OF BOATS

[A licensed officer or able seaman shall be placed in charge of each boat or pontoon raft; he shall have a list of its lifeboat men, and other members of its crew which shall be sufficient for her safe management, and shall see that the men placed under his orders are acquainted with their several duties and stations.

[A man capable of working the motor shall be assigned to each motor boat.

[The duty of seeing that the boats, pontoon rafts, and other lifesaving appliances are at all times ready for use shall be assigned to one or more officers.

[MUSTER ROLL AND DRILLS

[Special duties for the event of an emergency shall be allotted to each member of the crew.

[The muster list shows all these special duties, and indicates, in particular, the station to which each man must go, and the duties that he has to perform.

[Before the vessel sails the muster list shall be drawn up and exhibited, and the proper authority, to be designated by the Secretary of Commerce, shall be satisfied that the muster list has been prepared for the vessel. It shall be posted in several parts of the vessel, and in particular in the crew's quarters.

[MUSTER LIST

[The muster list shall assign duties to the different members of the crew in connection with—

- [(a) The closing of the water-tight doors, valves, and so forth.
- [(b) The equipment of the boats and rafts generally.
- [(c) The launching of the boats attached to davits.
- [(d) The general preparation of the other boats and the pontoon rafts.

[(e) The muster of the passengers.

[(f) The extinction of fire.

[The muster list shall assign to the members of the stewards' department their several duties in relation to the passengers at a time of emergency. These duties shall include—

- [(a) Warning the passengers.
- [(b) Seeing that they are dressed and have put on their life jackets in a proper manner.
- [(c) Assembling the passengers.
- [(d) Keeping order in the passages and on the stairways, and, generally, controlling the movements of the passengers.

[The muster list shall specify definite alarm signals for calling all the crew to the boat and fire stations, and shall give full particulars of these signals.

[MUSTERS AND DRILLS

[Musters of the crews at their boat and fire stations, followed by boat and fire drills, respectively, shall be held at least once a week, either in port or at sea. An entry shall be made in the official log book of these drills, or of the reason why they could not be held.

[Different groups of boats shall be used in turn at successive boat drills. The drills and inspections shall be so arranged that the crew thoroughly understand and are practiced in the duties they have to perform, and that all the boats and pontoon rafts on the ship with the gear appertaining to them are always ready for immediate use.

[LIFE JACKETS AND LIFE BUOYS

[A life jacket of an approved type, or other appliance of equal buoyancy and capable of being fitted on the body, shall be carried for every person on board, and, in addition, a sufficient number of life jackets, or other equivalent appliances, suitable for children.

【First. A life jacket shall satisfy the following conditions:

【(a) It shall be of approved material and construction.

【(b) It shall be capable of supporting in fresh water for twenty-four hours fifteen pounds avoirdupois of iron.

【Life jackets the buoyancy of which depends on air compartments are prohibited.

【Second. A life buoy shall satisfy the following conditions:

【(a) It shall be of solid cork or any other equivalent material.

【(b) It shall be capable of supporting in fresh water for twenty-four hours at least thirty-one pounds avoirdupois of iron.

【Life buoys filled with rushes, cork shavings, or granulated cork, or any other loose granulated material, or whose buoyancy depends upon air compartments which require to be inflated, are prohibited.

【Third. The minimum number of life buoys with which vessels are to be provided is fixed as follows:

【Vessels under one hundred feet in length, minimum number of buoys, two; vessels one hundred feet and less than two hundred feet in length, minimum number of buoys, four, of which two shall be luminous; vessels two hundred feet and less than three hundred feet in length, minimum number of buoys, six, of which two shall be luminous; vessels three hundred feet and less than four hundred feet in length, minimum number of buoys, twelve, of which four shall be luminous; vessels four hundred feet and less than six hundred feet in length, minimum number of buoys, eighteen, of which nine shall be luminous; vessels six hundred feet and less than eight hundred feet in length, minimum number of buoys, twenty-four, of which twelve shall be luminous; vessels eight hundred feet and over in length, minimum number of buoys, thirty, of which fifteen shall be luminous.

【Fourth. All the buoys shall be fitted with beackets securely seized. Where two buoys only are carried, one shall be fitted with a life line at least fifteen fathoms in length, and where more than two buoys are carried, at least one buoy on each side shall be fitted with a life line of at least fifteen fathoms in length. The lights shall be efficient self-igniting lights which can not be extinguished in water and they shall be kept near the buoys to which they belong, with the necessary means of attachment.

【Fifth. All the life buoys and life jackets shall be so placed as to be readily accessible to the persons on board; their position shall be plainly indicated so as to be known to the persons concerned.

【The life buoys shall always be capable of being rapidly cast loose and shall not be permanently secured in any way. The owner of any vessel who neglects or refuses to provide and equip his vessel with such lifeboats, floats, rafts, life preservers, line-carrying projectiles, and the means of propelling them, drags, pumps, or other appliances, as are required under the provisions of this section, or under the regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce, authorized by and made pursuant hereto, shall be fined not less than \$500, nor more than \$5,000, and every master of a vessel who shall fail to comply with the requirements of this section, and the regulations of the Board of Supervising Inspectors, approved by the Secretary of Commerce, authorized by and made pursuant hereto, shall upon conviction be fined not less than \$50, nor more than \$500.】

[(1) *Section 4470 of the Revised Statutes (46 U.S.C. 463)*]

["Every steamer carrying passengers or freight shall be provided with suitable pipes and valves attached to the boiler to convey steam into the hold and to the different compartments thereof to extinguish fire, or such other suitable apparatus as may be prescribed by the regulations of the board of supervising inspectors, with the approval of the Secretary of Commerce and Labor, for extinguishing fire in the hold and compartments thereof by the introduction through pipes into such hold and compartments of carbonic acid gas or other fire-extinguishing gas or vapor; and every stove used on board of any such vessel shall be well and securely fastened, so as to prevent it from being moved or overthrown, and all woodwork or other ignitable substances about the boilers, chimneys, cook houses, and stovepipes, exposed to ignition shall be thoroughly shielded by some incombustible material in such a manner as to leave the air to circulate freely between such material and woodwork or other ignitable substance; and before granting a certificate of inspection the inspector shall require all other necessary provisions to be made throughout such vessel to guard against loss or danger from fire."]

[(2) *Section 4471 of the Revised Statutes (46 U.S.C. 464)*]

["SEC. 4471. Every steamer permitted by her certificate of inspection to carry as many as fifty passengers, or upward, and every steamer carrying passengers, which also carries cotton, hay, or hemp, shall be provided with a good double-acting steam fire pump, or other equivalent apparatus for throwing water. Such pump or other apparatus for throwing water shall be kept at all times and at all seasons of the year in good order and ready for immediate use, having at least two pipes of suitable dimensions, one on each side of the vessel, to convey the water to the upper decks, to which pipes there shall be attached, by means of stopcocks or valves, both between decks and on the upper deck, good and suitable hose of sufficient strength to stand a pressure of not less than one hundred pounds to the square inch, long enough to reach to all parts of the vessel and properly provided with nozzles, and kept in good order and ready for immediate service. Each fire pump thus prescribed shall be supplied with water by means of a suitable pipe connected therewith, and passing through the side of the vessel so low as to be at all times under water when she is afloat. Every steamer shall also be provided with a pump which shall be of sufficient strength and suitably arranged to test the boilers thereof.

["On and after October 1, 1937, every passenger vessel with berthed or stateroom accommodation for fifty or more passengers shall be equipped with an automatic sprinkler system, which shall be in addition to any other device or devices for fire protection, of a type prescribed by the Board of Supervising Inspectors and approved by the Secretary of Commerce. All enclosed portions of such vessels accessible to passengers or crew (except cargo holds, machinery spaces, and, when of fire-resisting construction, toilets, bathrooms, and spaces of similar construction) shall be protected by an automatic sprinkler system: *Provided*, That if after investigation the Bureau of Marine Inspection and Navigation finds in the case of a particular vessel the application of this paragraph is unnecessary properly to protect life on such vessel, an exception may be made. The Bureau of Marine

Inspection and Navigation shall cause to be made suitable tests and inspections as will insure the proper working of such systems. In carrying out the provisions of this paragraph the Bureau of Marine Inspection and Navigation is hereby authorized and directed to prescribe the particular approved type, character, and manner of installation of systems to be fitted. The term 'type' as used in this paragraph shall be considered to mean any system which will give a prescribed or required efficiency and shall not mean some peculiar shape or design and shall not be confined to some certain brand or make."】

【(3) *Section 4479 of the Revised Statutes (46 U.S.C. 472)*

【"The board of supervising inspectors may require steamers carrying either passengers or freight to be provided with such number and kind of good and efficient portable fire-extinguishers as, in the judgment of the board, may be necessary to protect them from fire when such steamers are moored or lying at a wharf without steam to work the pumps."】

【(4) *Section 4481 of the Revised Statutes (46 U.S.C. 474)*

【"Every steam-vessel navigating rivers only, except ferryboats, freight-boats, canal-boats, and towing-boats, of less than fifty tons, shall have at least one good substantial boat with lines attached, and properly supplied with oars, and kept in good condition at all times, and ready for immediate use; and in addition thereto, every such vessel carrying passengers shall have one or more metallic life-boats, fire-proof, and in all respects good and substantial boats, of such dimensions and arrangements as the board of supervising inspectors by their regulations shall prescribe, which boats shall be carried in the most convenient manner to be brought into immediate use in case of accident. But where the character of the navigation is such that, in the opinion of the supervising inspector, the metallic life-boats can be dispensed with, he may exempt any such vessel from carrying the same; or may require a substitute therefor, at his discretion."】

【(5) *Section 4482 of the Revised Statutes (46 U.S.C. 475)*

【"Every such steam-vessel carrying passengers shall also be provided with a good life-preserver, made of suitable material, for every cabin passenger for which she will have accommodation, and also a good life-preserver or float for each deck or other class passenger which the inspector's certificate shall allow her to carry, including the officers and crew; which life-preservers or floats shall be kept in convenient and accessible places on such vessel in readiness for immediate use in case of accident."】

【(6) *Section 4483 of the Revised Statutes (46 U.S.C. 476)*

【"Every such steam vessel carrying passengers shall keep such fire buckets, axes, and water barrels as shall be prescribed by the regulations established by the board of supervising inspectors, with the approval of the Secretary of Commerce and Labor. The buckets and barrels shall be kept in convenient places and filled with water, to be in readiness in case of fire, and the axes shall be kept in good order and ready for immediate use. Tanks of suitable dimensions and arrangement, or buckets in sufficient number, may be substituted for barrels."】

[(7) *Section 4492 of the Revised Statutes (46 U.S.C. 490)*

["Every barge carrying passengers, while in tow of any steamer, shall be subject to the provisions of this Title relating to fire-buckets, axes, life-preservers, and yawls, to such extent as shall be prescribed by the board of supervising inspectors; and for any violation of this section the penalty shall be two hundred dollars, recoverable one-half for the use of the informer."]

[(8) *Section 2(a) of the Act of October 9, 1940 (ch. 777, 54 Stat. 1028; 46 U.S.C. 463a)*

["Such provision to guard against and extinguish fire shall be made on every vessel which is subject to the provisions of subsection (4), (5), or (6) of Section 1 of this Act, or of any other section of title 52 of the Revised Statutes, as amended (sections 4399 to 4500, inclusive), or Acts amendatory or supplementary thereto, as shall be prescribed by the Board of Supervising Inspectors and approved by the Secretary of Commerce."]

[(9) *Section 11 of the Act of May 28, 1908 (ch. 212, 35 Stat. 428; 46 U.S.C. 396)*

["That every such barge shall be equipped with the following appliances of kinds approved by the Board of Supervising Inspectors: At least one lifeboat, at least one anchor with suitable chain or cable, and at least one life-preserver for each person on board."]



